EIGHT-PENNY NEWS

VOLUME 9 • NUMBER 6 MARCH 1991

CABO energy code an improvement, study says

Increased R-value requirements in the 1989 CABO Model Energy Code (MEC) show improved energy efficiency over the 1986 version, according to a recent study.

The report, done by Battelle Pacific Northwest Laboratories for the Mineral Insulation Manufacturers Association (MIMA), found the new standards can save money for owners of single-family homes beginning the first year of home ownership and throughout a 30-year mortgage period. These savings do not require increasing the "payback period" needed to cover the cost of extra insulation with energy savings.

The study analyzed energy costs in a prototype two-story, 1,995-square-foot house in 17 cities throughout the country. It included four heating fuel/system combinations and covered a range of fuel prices and types. The fuel efficiencies of the systems were assumed to be equal to those required by the new federal standards due to take effect in 1992.

The study compares the energy performance of the 1989 MEC to the 1986 MEC code and the 1989 Department of Housing and Urban Development's (HUD) energy standards. Compared to those codes, the 1989 MEC reduces a home's total heating and cooling energy use by 25% or more in most parts of the country, and results in first-year savings in every location.

The new code saw its greatest returns in northern climates, and its poorest in warmer climates, where energy savings improved only slightly over the 1986 MEC. In general, the code saves more energy in heating than in cooling.

Not surprisingly, the heart of the new code, which is a performance-based code with different standards for different locales, is higher R-values throughout the building shell. Ceiling R-value standards, for instance, rose from R-19 to R-33 in Washington, D.C.; from R-19 to R-38 in Seattle; and from R-25 to R-38 in Chicago. The 1989 code similarly increased R-value standards for walls and for floors over unheated basements.

The new code also tightens up windows, expanding air spaces from 1/4-inch to 1/2-inch in some cases, and switching in cooler climate areas to wood frames instead of aluminum. (A small surprise is that of the 17 cities studied, which included such cold places as Chicago, Cleveland, and Boston, only Minneapolis had window standards requiring low-emissivity glazing.)

The findings are important because the CABO MEC is widely used by state and local code jurisdictions as models for their codes. Many of these jurisdictions have not yet adopted the 1989 MEC (a lag between the introduction of new model codes and their adoption by states and localities is common). These findings might speed the adoption process, particularly if the Bush Administration's energy plan — due early this year — emphasizes conservation.

The report might also reinforce the argument — long made by builders of superinsulated homes — that when it comes to insulation, more is better, and that increased insulation levels are cost-effective and reduce overall home ownership costs.

For a complete copy of the report, write to MIMA, 1420 King Street, Alexandria, VA 22314.

These resin pellets made by GE Plastics will become a new solid surfacing material touted to be more versatile than similar products on the market.

GE introduces more versatile plastic for solid surfacing

GE Plastics recently introduced a resin that will compete with solid surfacing products such as Corian and Avonite, and even ceramic or wood.

Referred to as *heavy Valox*, it is made from polybutylene teraphthalate or PBT. About 65% of the material is a proprietary mix of mineral fillers. (Other solids as well as cultured marble and onyx also use — filler specifically *alumina trihydrate* — see "Solid Surfacing Options," *11/90*). The mineral filler gives the plastic weight, durability, flammability protection, and a certain "feel."

Heavy Valox product manager, Blair Anthony, sees some advantages over other formulations. "It's easily thermoformed and can even be injection molded with standard tooling."

This means it can be used in kitchens and baths not only for countertops and cast sinks but molded parts like faucet handles. It's also being used for cosmetic packaging, small appliance packaging, and even piano keys. According to GE Plastics, it can be finished to give the feel of glass, ceramic, porcelain, ivory, and metal. It can be easily pigmented with any color, and can even be electroplated. With a specific gravity of 2.4, it has about the same heft as aluminum or ceramic.

Anthony also claims that heavy Valox has a much higher impact resistance than any of the existing solid surfacing, yet like the others it is monolithic and can be fabricated with woodworking tools and

continued on next page

Upstate New York condo building sinks in sea of rotting cattails

Prices are not the only thing sinking in the Rochester, N.Y., condo market — a 14-unit building in a condominium project built in 1974 has sunk as much as 6 inches.

Bay Village Condominiums seemed fine until about 1984, when small cracks appeared in the masonry of one of its buildings. Even then, the owners thought it was just normal settling. Soon door jambs twisted out of square; now doors won't close at all, and round objects tend to roll to one end of some of the units.

The condo is sinking because it was built on top of an underground layer, about 26 feet wide, of what is most likely rotting cattails or leaves. Edson Baker, a local engineer, says the sinking will probably continue. He has recommended that a third of the building be torn down and rebuilt with friction pilings sunk into the organic layer.

Friction pilings, which come in various shapes, rely on friction against the surrounding soil to provide resistance, rather than resting on solid bedrock. In this case, says Baker, friction pilings provide the best solution because solid material on which to rest conventional pilings is far below the surface.

Baker says that for the original builders to miss the narrow 26-foot-wide layer of soft subsurface material was relatively easy. Most soil borings, he says, are done at 50-foot intervals.

However, he says, it is worth checking for poor subsoil conditions if a site has any of several indicators: a location in or near a lowland or swampy area; a valley location that might lie over old stream sites; or exposed rock outcroppings. These factors might suggest a careful soil boring test should be done.

"Probably the best way to size up a site is to ask a local soil engineer. They'll often have a good idea of how much trouble to expect just from the location. In some cases, you may have to build a special foundation, such as a floating foundation, to compensate for underlying soil

continued on next page

Statistics indicate a possible building rebound

An increase in existing-home sales late last year and the prospect of lower mortgage rates has raised hopes for a home building rebound in 1991.

Sales of existing homes showed a modest 3% increase in November after two months of decreases. The November figure was still about 12% below the 1989 rate, but at the very least, the increase marked the bottoming out of the market, and the beginning of a turnaround, according to some analysts.

Although most analysts expect any recovery of the housing industry to be gradual, the consensus is that the worst may be over.

Further cause for optimism is the Federal Reserve Board's efforts to free up the money supply. While the Federal Reserve cannot directly lower interest rates, its actions are contributing to a lowering of mortgage rates. By the end of last year, the average 30-year fixed mortgage rate was 9.64%, which was the lowest rate in three years. Rates are expected to continue to drop, which will only help spur the slumping industry.

"We do see a light at the end of the tunnel for single-family houses," said Robert Villanueva, director of forecasting for the National Association of Home Builders (NAHB).

The recovery, however, will depend on the mortgage rate declining further to 9%, which is expected, he said.

While none of these factors alone would spell a rebound, together they indicate that an improvement in the housing market may start this spring.

Housing, which has technically been in a recession for about two years, is historically the first sector to feel an economic downturn, and the first to start recovery.

Book lists state laws for design-build companies

A digest of state architectural licensing laws for remodelers and builders who offer design services was recently published by the National Association of Home Builders (NAHB) Remodelors Council.

The 75-page book, *Analysis of State Architectural Licensing Laws for Designers and Builders*, summarizes how each state regulates designers who are not licensed architects.

Mary DiCrescenzo, NAHB associate litigation counsel, says laws are most stringent in New Jersey, Connecticut, Florida, Hawaii, Texas, and Indiana. While each state has different regulations, their enforcement "depends a great deal on how strong the state's architectural board is, how particular they are, and what they'll pursue," she says. Penalties for violations also vary. In some states, convictions can lead to prison terms and fines of up to $1,000.

The book, published in conjunction with the American Institute of Building Design, is a response to increasing concerns by design-build firms about how to describe their services.

Some designers call their services "architectural," which is illegal in all states, DiCrescenzo says. In Virginia and New Jersey, designers have been fined after receiving complaints from local architects that the firms were misrepresenting themselves.

For a copy of the book, contact the Remodelor's Council at 800/368-5242. The cost is $15 for members, $20 for non-members.

Rainforest watchdog group starts "good wood" program

Builders who need to use exotic woods harvested from the rain forest, but who are reluctant to add to the destruction of that natural resource have somewhere to turn.

The Rainforest Alliance in New York City recently launched Smart Wood, which is a certification program that identifies mahogany, teak, and other exotics harvested under sustainable conditions.

Companies verified to be selling approved wood will be granted the right to use the Smart Wood name and logo for marketing and will be included on the Rainforest Alliance's published list.

In the absence of broadly accepted standards, the Alliance is evaluating sources of tropical timber on a case-by-case basis. Criteria considered in the evaluation includes: maintenance of environment, such as watershed stability and erosion control; sustained-yield production techniques; and impact on the community.

Sources strictly adhering to Alliance standards will be classified as sustainable sources, while those that fall a little short but demonstrate a commitment to adopt the standards are classified as "well-managed."

So far the list of Smart Woods includes only plantation-grown teak, mahogany, and rosewood harvested by the State Forestry Corporation on the island of Java, which is classified well-managed.

For more information, contact the Rainforest Alliance, 270 Lafayette St., Suite 512, New York, NY 10012; 212/941-1900.

From What We Gather

In Vermont, some asbestos-containing building materials can be removed by uncertified workers, according to the Vermont office of the Environmental Protection Agency. Vinyl asbestos floor tile, linoleum, roofing materials, and external asbestos siding may be removed, repaired, or painted by anyone. Those products do not release asbestos fibers that cause the health risk.

Women like their showers 7° to 10° hotter than most men according to an informal poll taken by Grohe, the German bath fixture company, and reported in *Kitchen and Bath Business*. The New York-based trade journal cited the extra layer of fat beneath women's skin as the reason they could take heat.

Persian Gulf turmoil is good news for the wood stove industry. Vermont Castings, the largest wood stove manufacturer in the nation, experienced a 600% increase in orders in the month following the Iraqi invasion of Kuwait.

Nationally the average cost of new and remodeled kitchens last year was $17,420, according to a survey by the National Kitchen and Bath Association. In the West, the average was $23,303, about a third higher.

Smoke from burning pressure-treated wood is no more toxic than that from untreated wood, according to the National Bureau of Standards. But the resulting ash may contain concentrations of heavy metals which are potential pollutants.

Plastic, *continued*

renewed with sandpaper.

Although the basic material has passed appropriate ANSI tests, the company is still making adjustments to qualify it within various flammability classes. So far, heavy Valox is only available in resin pellet form, but GE Plastics plans to be producing sheet material by midyear. Anthony speculates the cost of heavy Valox "will be in the same ballpark as the others."

He says the material will be produced in many different formulations and thickness — possible because of the inherent strength of the material — to accommodate a variety of finish needs. However, whether the plastics manufacturer, which is typically not involved in the end-use product, will set up a network of dealers and attempt to influence how the material is sold and fabricated as Dupont and others have done has yet to be determined.

Condos, *continued*

conditions," he says.

Even that, however, is no guarantee, as the Bay Village project shows: the foundations of those buildings were of a "floating" type, but this didn't keep them from dropping when the deeply buried organic layer compressed.

While sinking in soft subsurfaces is not very common in single-family home construction, it should be considered when building a large house, Baker says.

"Single-family homes aren't as apt to sink as bigger buildings because they're relatively light. A single-family home on this site probably wouldn't have sunk."

Nevertheless, Baker knows of one 3,500-square-foot, $350,000 home that had one section sink 6 inches. Size may have been a factor there, he says.

— David Dobbs

Tax Talk

How to avoid a tax audit

By Irving L. Blackman

Every year, without fail, tax return time comes. Sometimes, in the form of an audit, the tax man comes too. And worst of all, much too often the tax man finds you owe more taxes. The following tips may help you avoid being audited and paying more in taxes.

- ***Don't make mistakes***. Recalculate every figure on your tax return. Math errors draw attention. Trace every schedule total and compare it to the figure used. Reread the description on every line; putting the right figure on the wrong line is a no-no.
- ***Follow instructions to the letter.*** Answer all questions asked on the return. Attach all schedules requested. Sign and date return.
- ***Explain unusual items.*** This is a must. Once your return is pulled by an IRS computer, a live IRS employee will look it over. A schedule, with appropriate explanations, will usually avoid an audit. For example, explain any differences reported on 1099s and W-2s, a large deduction (like a casualty loss) or a substantial charitable contribution (attach your full appraisal report). When in doubt, over inform.
- ***File on time.*** An extension is okay. Either file the return on time or get a timely extension. Also, file the extended return when due; even if you don't owe any additional tax. Pay the tax due. If you are short, it is better to borrow and pay the tax than to owe the IRS. If you're nervous about your return arriving on time, register it at the post office, return receipt requested. You must prove the return was filed on time if timeliness becomes an issue. Your best bet, if you have the time, is to file your return at a local IRS office and have your copy date-stamped by the clerk.
- ***Elect S corporation status.*** A business that reports on Schedule C of Form 1040 is more likely to get audited than the same business reporting as a corporation. Yet an S corporation usually reports the same income or loss as on Schedule C.

Irving L. Blackman, CPA, J.D., is with Blackman Kallick Bartelstein, 300 South Riverside Plaza, Chicago, IL 60606.

Japanese builders dig deep

Imagine a hole 660 feet deep and 528 feet wide. Now fill it with a 40-story cylindrical office building. Sound like sci-fi? Perhaps, but it's also one of 11 subterranean proposals developed for the Japanese International Trade and Industry Ministry by major Japanese contractors.

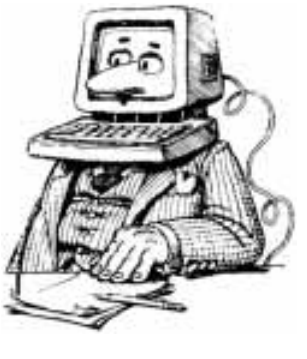
As one of the most crowded cities in the world, Tokyo has only one direction left to build, and that's down. The metropolis already has a maze of subways and business districts underground. Still the engineering on a hole this big is a little more daunting.

Computer Bytes

Software Shop Systems, makers of job cost accounting and estimating software has planned 50 training courses in 16 cities this year for contractors. For more information, contact Linda Dankert at Software Shop Systems, Rte. 34, P.O. Box 728, Farmingdale, NJ 07727; 800/554-9865.

Takeoff Estimator software for IBM-compatible computers includes a database with 18,000 items and prices. It also has predefined assemblies for fast estimates, as well as being fully programmable by the user. For more information, contact Estimate Software, Box 1652, Winter Park, FL 32790; 800/253-4017.

FastRegs/Construction program from OSHA-Soft Corp. enables users of IBM-compatible computers to find pertinent OSHA construction regulations in seconds. A subscription to the program includes a monthly update disk and a newsletter. The program can be searched by key word, phrase, or citation. A table of contents can also be scanned. For more information, contact OSHA-Soft, Route 122-Amherst Station, P.O. Box 668, Amherst, NH 03031-0668; 603/672-7230.



Graphsoft introduced Blueprint 2.0, an upgraded version of its 2-D CAD program for Macintosh computers. The program, which can be used by architects, builders, and other draftsmen, provides verbal and graphic clues to endpoint, midpoints, and other significant points as you draw. For more information, contact Graphsoft, 8370 Court Ave., Suite 202, Ellicott City, MD 21043; 301/461-9488.

Electricity and cancer link supported by EPA study

Property near high-tension lines may drop sharply in value as news spreads of an EPA report supporting a link between cancer risk and extremely low level electromagnetic fields (ELF).

The Environmental Protection Agency (EPA) report is the first time the government has formally acknowledged the theory that exposure to ELF may increase the risk of cancer.

The draft report evaluated 50 epidemiological studies and hundreds of biological studies, according to Martin Halper, a director at the EPA Office of Radiation.

"The majority of the studies showed statistically significant positive results," he said.

For instance, in a study of telephone workers, several cases of male breast cancer were reported, which is more than the amount researchers would expect to find in the general population. Since the telephone workers are exposed to ELF at a higher rate than the general population, the study indicates a link, Halper said.

"That does not mean that the fields caused breast cancer. It just means that something is there that should be studied more closely," he added.

The EPA is now recommending more studies to quantify exposure levels and better judge the actual risk, which will permit the agency to set policy or create health regulations if necessary.

It is still not clear how much exposure is dangerous, Halper said. There are several factors to consider including length of exposure, strength of the field, and proximity to the field.

Currently the Electric Power Research Institute (EPRI) in Palo Alto, Calif., is studying sources of ELF in the home and how to reduce them, according to Leonard Sagan, program director for radiation.

For instance, changing the way electrical systems are grounded to plumbing or sewerage systems may be a way to lower fields in homes, he said.

"But we still do not know if that is a source that matters," he said.

While the EPA report revealed no causal link between ELF exposure and cancer, it did suggest that the fields may be a cancer "promoter," Halper said. In the jargon of cancer research, a promoter does not directly cause cancer, but it can provide a more fertile atmosphere for certain cancers to take root, Halper said.

The study, however, has done little to quell controversy over the subject. Shortly after the report was issued, it was criticized by the Pentagon, whose scientists concluded that ELF do not induce or promote cancer.

Although the report indicates only a small cancer risk, it will prompt more study and increase media coverage, Sagan said.

"People are going to have to be patient. Scientific studies take a long time. We are not going to know anything for three to five years," he warned.

So far, the EPA has targeted about $750,000 for more research this year, and another study under way, which involves 23,000 people, is expected to provide some answers in about three years. Much of the previous research on the health risks posed by ELF has been funded by power companies.

The top source of ELF is high-tension electric transmission lines strung on high towers.

Other sources of ELF include electrical distribution lines and common household or occupational appliances, such as electric blankets, video display terminals, televisions, and bedside appliances.

Developer wins wetlands damages

In a precedent-setting decision, a developer in July was awarded monetary damages for being denied permission to build on wetlands.

The U.S. Claims Court cited the Fifth Amendment, which prohibits the government from taking private property for public use without just compensation.

Loveladies Harbor Inc., which owned the 51-acre parcel in New Jersey since 1956, had been seeking permits to build for several years. The company had most recently been denied a permit by the U.S. Army Corps of Engineers to fill 11½ acres. The Court ruled that this denial was in essence a "taking" of the land, since it rendered it of no economic value.

Monetary damages have been awarded when a court found a taking had occurred, but never to a developer in a wetlands dispute.

"This is the first time [the taking argument] has been successfully applied to the federal Clean Water Act, Section 404, which requires a permit to fill the wetland," says Bill Ethier, the National Association of Home Builders Litigation Counsel. "This is important because the definition of what is a wetland is so vast."

The decision, however, is not expected to soften the Corps enforcement of wetland regulations, says Ethier. At least at state and federal levels, the agencies that enforce the regulations (and which are technically penalized) are far removed from the pain of paying the judgments. It's possible, however, that local agencies, such as conservation commissions and planning boards, might take the case as a warning, since town budgets would feel the effects of a large monetary judgment more keenly.

The Claims Court has sent a new signal in the continuing war over wetlands. As Ethier puts it, "What the constitution says, and what this case emphasizes, is that if you destroy private property, the public pays for it. You cannot deny someone use of their property."

New edition of Mass. building code changes rules for multi-unit housing

Massachusetts builders are preparing for the change from the 4th to the 5th edition of the Massachusetts State Building Code. The 5th edition reflects the format and contents of the 1987 BOCA code, as well as incorporating the unique requirements of the Massachusetts code. A User's Guide to the Fifth Edition has been developed and is distributed with the purchase of each code (available from the State Bookstore, Boston).

These changes based on the BOCA code will affect mainly multi-unit housing and commercial projects. The Massachusetts One- and Two-Family Dwelling Code, which is based on the CABO Model Code, has not been changed in the 5th edition; changes in that code are expected in June 1991, as the latest CABO changes are incorporated. Builders who build or remodel mainly single-family homes and duplexes may want to wait until then to purchase the new code book.

In a course offered last December by the Builders Association of Greater Boston (BAGB), code consultants Peter Dimatteo and David Macartney reviewed areas of substantial change in the 5th edition, including:

- A revised classification of construction types.
- A more flexible approach to fire separations between buildings and lot lines.
- New "Use Group" descriptions and a more liberal set of rules for mixed uses and occupancies.
- New means of egress requirements regarding travel distance and exit capacity.

Builders can review changes at a BAGB seminar, "Code Review for the Licensed and Experienced Builder," on Thursday, March 14, from 12:30 to 5:30 p.m. For registration information, call 617/773-1300.

Used building materials just fine in Vermont

Recent *Journal of Light Construction* surveys of builders and homeowners in northern Vermont suggest that the use of recycled building materials may grow.

About 70% of the homeowners said they would shop at a store that sold used building materials, if such a store was convenient.

And 69% of the builders said a salvage or recycling center would be useful. More than half of the builders surveyed currently salvage framing lumber, flooring, and plywood. A full 84% said they would salvage materials to save on tipping fees.